

To: Griswold, Hays[Griswold.Hays@epa.gov]; Christoph Goss[christoph.goss@deereault.com]
Cc: Way, Steven[way.steven@epa.gov]; Chris Hassel (CHassel@harwest.com)[CHassel@harwest.com]; Bob Heeter[bheeter@harwest.com]; Jacob Greenman (jgreenman@harwest.com)[jgreenman@harwest.com]
From: Matt Francis
Sent: Thur 9/10/2015 2:44:16 PM
Subject: RE: Gold King Portal Coordination

Hays

To clarify: you are suggesting removing shotcrete from line 2, and changing to evaluating the feasibility of wire mesh and split sets without shotcrete. Correct?.

Matt

From: Griswold, Hays [mailto:Griswold.Hays@epa.gov]
Sent: Thursday, September 10, 2015 8:35 AM
To: Christoph Goss <christoph.goss@deereault.com>
Cc: Way, Steven <way.steven@epa.gov>; Matt Francis <m.francis@erllc.com>; Chris Hassel (CHassel@harwest.com) <CHassel@harwest.com>; Bob Heeter <bheeter@harwest.com>; Jacob Greenman (jgreenman@harwest.com) <jgreenman@harwest.com>; Griswold, Hays <Griswold.Hays@epa.gov>
Subject: Re: Gold King Portal Coordination

To all, I would like to change the second line item in the plan as written to read:

Harrison Western will test the feasibility of using steel mesh and split set bolts to support the back. If that approach proves successful it will be continued to completion before installation of the steel sets. If not successful the team will coordinate a different approach.

Christoph, if you could make that change and send again to everyone. If everyone agrees by return email then the plan will be considered resolved and in writing.

thank you,

Hays

Sent from my iPad

On Sep 9, 2015, at 4:17 PM, Christoph Goss <christoph.goss@deereault.com> wrote:

All

Based on follow up conversations during the course of today, the following is now the preferred ground support plan. This will be detailed in the plans.

- .□□□□ Final/permanent support will be steel sets backfilled with cellular concrete
- .□□□□ Temporary support for installation of the sets will be shotcrete and some rock bolting
- .□□□□ Steel sets will be 10'x10' outside dimensions of W8x40 I-beams on 4' centers
- .□□□□ Past the high roof areas, the posts may need to be shortened to match adit dimensions
- .□□□□ Steel will be painted with a corrosion resistant coating (to be specified soon)
- .□□□□ Concrete footers will need to be made with Type V or Type II cement meeting type V sulfate resistance (same as shotcrete)
- .□□□□ Lagging will be steel c channel
- .□□□□ Backfill will be cellular concrete or urethane foam (currently being evaluated)

Christoph

From: Christoph Goss

Sent: Wednesday, September 09, 2015 11:56 AM

To: Way, Steven <way.steven@epa.gov>; Matt Francis <m.francis@erllc.com>; Chris Hassel (CHassel@harwest.com) <CHassel@harwest.com>; Bob Heeter <bheeter@harwest.com>; Jacob Greenman (jgreenman@harwest.com) <jgreenman@harwest.com>; Griswold, Hays (Griswold.Hays@epa.gov) <Griswold.Hays@epa.gov>
Cc: Christoph Goss <christoph.goss@deereault.com>
Subject: RE: Gold King Portal Coordination

All

Here are a few updates based on our conversation this morning.

.□□□□ Given that most of the team wants to use steel sets and that there is some concern about shotcrete sticking to the crown of the high roof areas, the support will now be steel sets with crown bars. This is the plan B discussed at the 8/25/2015 conference call. No shotcrete and bolting is planned for the adit.

.□□□□ See attached sketch for the steel set and crown bar concept. This will be detailed in the plans.

.□□□□ Steel sets will be 10'x10' outside dimensions W8x40 with C10x30 crown bars

.□□□□ Past the high roof areas, the posts may need to be shortened to match adit dimensions

.□□□□ Steel will be painted with a corrosion resistant coating (to be specified soon)

.□□□□ Concrete footers will need to be made with Type V or Type II cement meeting type V sulfate resistance (same as shotcrete)

.□□□□ Backfill will be cellular concrete or urethane foam (currently being evaluated)

.□□□□ Given that shotcrete is now limited to the portal area, no accelerator is needed

I will let you know ASAP if anything changes with this concept after we get the survey data.

Christoph

From: Christoph Goss
Sent: Wednesday, September 09, 2015 8:34 AM
To: Way, Steven <way.steven@epa.gov>; Matt Francis <m.francis@erllc.com>; Chris Hassel (CHassel@harwest.com) <CHassel@harwest.com>; Bob Heeter <bheeter@harwest.com>; Jacob Greenman (jgreenman@harwest.com) <jgreenman@harwest.com>; Griswold, Hays (Griswold.Hays@epa.gov) <Griswold.Hays@epa.gov>
Cc: Christoph Goss <christoph.goss@deereault.com>
Subject: Gold King Portal Coordination

Good Morning Everyone

I just wanted to note a few things regarding the portal work at Gold King.

.□□□□ Precision Survey plans to send us the base survey today

.□□□□ Goff Engineering is tentatively coming out to site tomorrow 9/10

- o They will need access assistance from Harrison Western to shoot the slopes
- o They will be in contact with Hays regarding the other survey claim boundaries

.□□□□ Jacob/Bob/Chris: I really need the full shotcrete submittal today so that we can get material ordered ASAP

.□□□□ Jacob/Bob/Chris: please send me the information on the rock bolts, hardware, and resin

.□□□□ Steve: please let me know if you need anything else on the flow control structure to present to your management team. I am available for a conference call if you want.

.□□□□ The best time for me to come out would likely be as Harrison Western starts the shotcreting. Assuming that we can get the shotcrete submittal squared away today, let me know when the shotcreting can begin.

Christoph

Christoph Goss, PhD, PE

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